



Seabird Behaviour

Part one

A Biology Programme for
Secondary Students
at the **Royal Albatross Centre**

Student Work Sheets

2011

Seabird Behaviour – Activities

Annual Cycle of the Royal Albatrosses



Northern Royal Albatross - Toroa
Diomedea epomophora sanfordi

- white body, black on backs of wings
- feeds on surface shoaling fish and squid
- male and female equal share in rearing 1 chick every 2nd year
- mature at 6 years - live about 45 years
- Mate in October, 1 egg laid in November
- incubation 79 days
- Chick guarded for the first 6 weeks,
- young depart late September



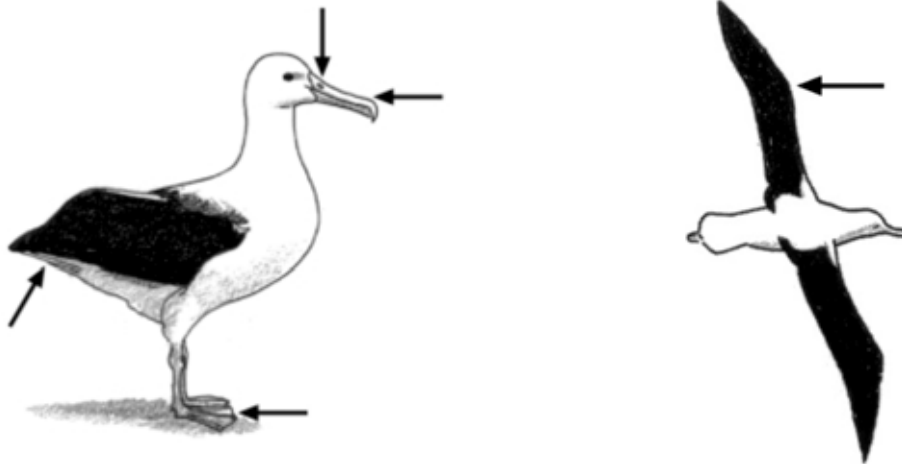
Annual Cycle of the Spotted Shag



Annual Cycle of the Stewart Island Shag

FEATURES OF AN ALBATROSS

1. Describe how an Albatross is adapted to spend 86% of its life at sea.



2. Why do albatross come to land? _____

REVIEW ANNUAL CYCLE OF ALBATROSS

3. Based on the weather (abiotic conditions) and the time of year (annual cycle) – what behaviours would you expect to observe today for the Albatross?

REVIEW TRACKING DATA

4. Royal Albatross can travel from their nesting site at _____ to their feeding site at _____

Fledged chicks do not return to the nesting site for _____ years.

Adolescents return to the nesting site _____ year.

Breeding adults return to the nesting site every _____ year.

Is this a migration? _____

5. Adolescent Male (88071) was tagged in early January and he spent the first month venturing up to 150-300 km from Taiaroa Head, returning every 1-2 days. What term would you used to describe this behaviour? _____

What additional information is the tracking project providing and why is this important?



Each of the birds had lightweight satellite transmitters attached to their back feathers and GPS locations were given every 6 hours and the data was plotted onto Google Earth Maps for visitors to our website to view. These birds were tracked for approximately one year.

All four albatrosses are currently no longer transmitting. We may never know the reason for this but speculations include detachment of the transmitter (due to natural wear and tear of moulting of the feathers), malfunction, or mortality of the albatross. However, if these albatrosses return to the colony as expected in the years to come, it may be possible to ascertain the reason.

Adolescent Male (88071) – last data received Apr 2009
Toroa (55028) – last data received Sep 2008
Juvenile Female (55027) – last data received Aug 2008
Juvenile Male (55029) – last data received Feb 2008

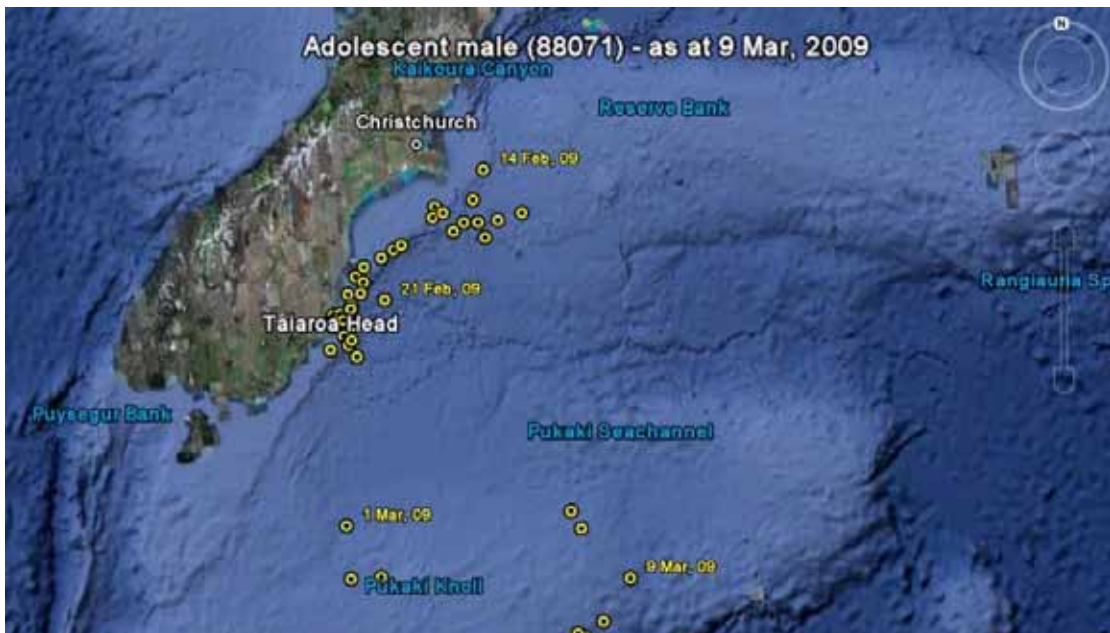
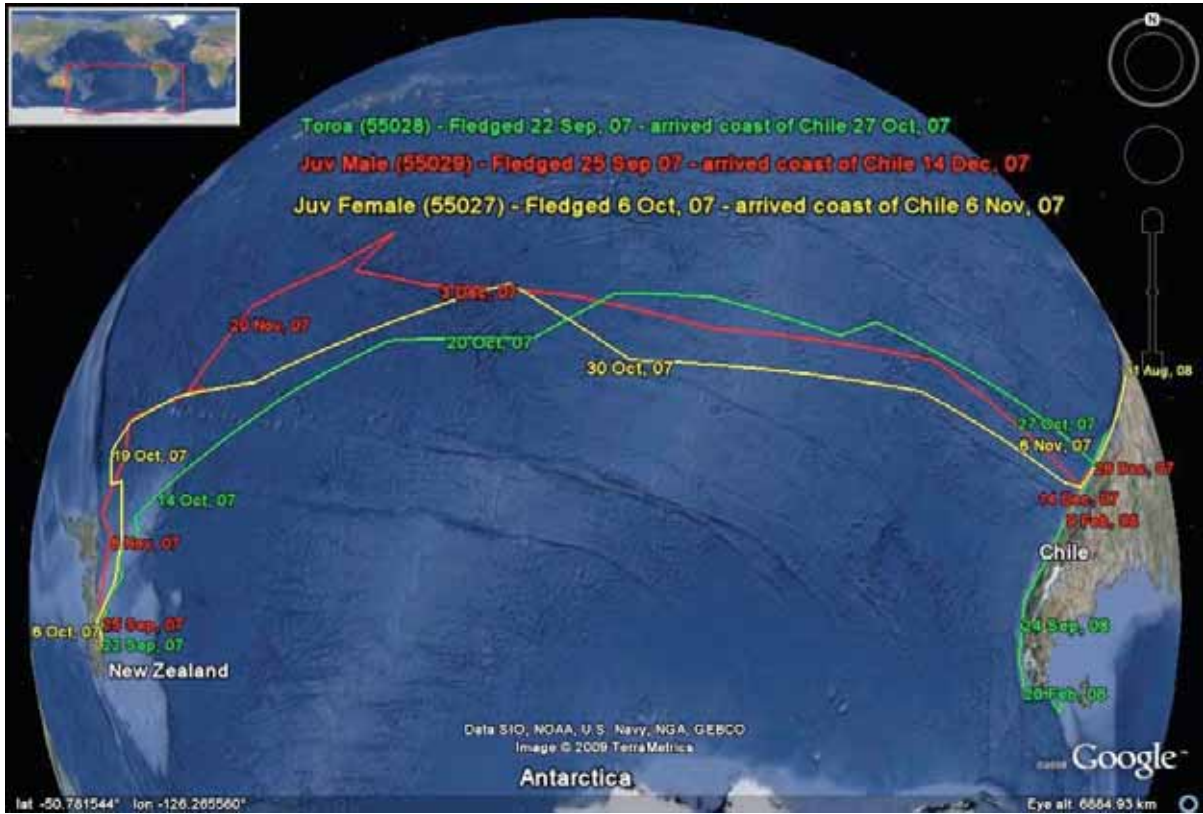
Journey

They appeared to head north from Taiaroa Head up the coast of NZ. From here they travelled across the southern ocean in an almost straight line, taking between 11 and 80 days to reach the coast of Chile from NZ waters.




The speed of the albatrosses ranged between 105 and 110 km/hr and the altitude was approximately 37m above sea level. The average daily minimum distance travelled ranged from 500km to just over 1000km and the total maximum distance travelled during the tracking period was 46,000km.

Oceanic and environmental data will be analysed with location data to find possible behavioural patterns as well as travel routes and ocean hotspots used by the Northern Royal Albatross and also the time of the year used.

Understanding where the Albatrosses go at every stage of its life is important in identifying possible reasons for population decline and possible management plans can be developed to aid the growth of the colony.



Comparative Behaviours - Use the displays , videos and viewing areas to investigate the behaviours listed and answer the questions.

Behaviour	Royal Albatross (Adult)	Royal Albatross (chick)	Stewart Island Shag	Spotted Shag
<p>COMMUNICATION</p> <p>Courtship displays (advertising - finding a mate)</p> 	<p>When Albatross return to Tairaroa Head in the spring, they are often seen skycalling with their wings extended and their bill pointing to the sky.</p> <p>In addition to the visual display, what other forms of behaviour are involved with this courtship dance?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>How would this courtship behaviour increase the chance of successful mating to produce viable offspring?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>To advertises to potential mates during courtship – the male Gargles....</p> <ul style="list-style-type: none"> - head waves (darts) - face colour,plumage crests <i>exposed</i> - wings frozen in ha If open position - Body held upright <p>It continues for 2-3 months.</p> 	<p>In Spotted Shags, the courtship dance is called a wing waving display and it continues for 2 weeks to a month.</p> <p>How do you think the courtship dance in this species differ to that of the Stewart Island Shag?</p> <p>_____</p> <p>_____</p> <p>_____</p> 
<p>COMMUNICATION</p> <p>Pair bonding display (recognition - keeping a mate)</p>	<p>What behaviours, in addition to the sky calling, are observed during the pair bond display?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>How do chicks communicate with their parents?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>Did you observe any mutural head lowering – a key feature of the Stewart Is Shag pair bond display?</p> <p>_____</p> <p>-</p> <p>Why not? _____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>The pair bond display of the Spotted shag is slightly different with mutual darting, pointing and bowing.</p>

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Behaviour	Royal Albatross (Adult)	Royal Albatross (chick)	Stewart Island Shag	Spotted Shag
<p>COMPETITION (Intraspecific)</p> <p>Nest territory and aggression</p>	<p>Are the nests spaced evenly? _____</p> <p>How do they react to another adult near their nest? _____ _____ _____ _____</p>	<p>How does the nest territory at the Chatham Islands differ? _____ _____</p> <p>What do you think they are competing for? _____ _____</p>	<p>Are the nests spaced evenly? _____</p> <p>How do they react to another adult near their nest? _____ _____ _____ _____</p>	<p>Are the nests spaced evenly along the cliff ledge? _____</p> <p>How do they react to another adult near their nest? _____ _____ _____ _____</p>
<p>COMPETITON (interspecific)</p> <p>predators</p>	<p>Do they compete with any other species on the headland for nest site? _____ _____</p> <p>What are the predators of the adult albatross? _____ _____</p> <p>How do albatross defend themselves? _____ _____</p>	<p>What are the predators of the albatross eggs and chicks? _____ _____</p> <p>How do albatross chicks defend themselves? _____ _____</p> <p>How does DOC control predators? _____ _____</p>	<p>Do they compete with any other species on the headland for nest sites? _____ _____</p> <p>What determines the distance between the nests/ _____ _____</p> <p>How do shags defend themselves? _____ _____</p>	<p>Why is the cliff site such a good nest site? _____ _____ _____ _____ _____ _____</p>